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Proposed Changes to NFPA 1994 Chemical/Biological Terrorism Ensembles



NIOSH
Public Meeting
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NFPA 1994 Revision Objectives

- To address broader range of response equipment for other response communities
- To establish criteria for biological and radiological (particulate) hazards
- To encourage manufacturer certification of products

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Key Changes

- Remove current hierarchy of protection
- Provide menu approach for selecting certification categories
- Add new tests and criteria for overall particulate protection

Current NFPA 1994 Classes

<i>Class</i>	<i>Challenge</i>	<i>Skin Contact</i>	<i>Vapor Threat</i>	<i>Liquid Threat</i>
1	Vapors Aerosols Pathogens	Not permitted	Unknown Not verified	High
2	Limited vapors Liquid splash Aerosols Pathogens	Not probable	IDLH	Moderate
3	Liquid drops Pathogens	Not likely	STEL	Low to none

Current Requirements

Class	Integrity	Permeation	Viral Penetration
1	Gas-tight SF ₆ (0.02%)	Gas (100%) Liquid (full) Agent (100 g/m ²)	No
2	SF ₆ (2.0%) Liquid-tight	Gas (1000 ppm) Liquid (10 g/m ²) Agent (10 g/m ²)	YES
3	Liquid-tight (limited)	Liquid (10 g/m ²) Agent (10 g/m ²)	YES

Proposed Menu – Barrier (Concept)

Type of Hazard	Integrity	Barrier Material
Vapor – High	SF6 (<0.02%)	Permeation – TIC gases, agent vapors (conc.)
Vapor – Low	MIST (100 PF)	Permeation – TIC gases, agent vapors (dilute)
Liquid – High	20 min shower	Permeation – TIC liquids, agents (high density)
Liquid – Low	4 min shower	Permeation – TIC liquids, agents (low density)
Particulate	Overall test (TBD)	None

Proposed Menu - Other

- 2 levels of physical properties
 - High: consistent with NFPA 1994, Class 1
 - Low: consistent with NFPA 1994, Class 3
- Optional certifications
 - Flame resistant materials
 - Flash fire escape protection

Intended Application

- Manufacturer select certification categories (barrier / physical properties)
- Manufacturer can perform multiple certifications
 - e.g., Vapor-H, Liquid-H, Particulate
- Products labels with protection levels
- Users/manufacturers are provided more options

Schedule

- Revision has been delayed one year to accommodate new approach
- Public proposal period will be reopened
- Next meeting - January 2003 (Tampa)
- Committee will complete new full draft by July 2003
- Final approval of standard in February 2005